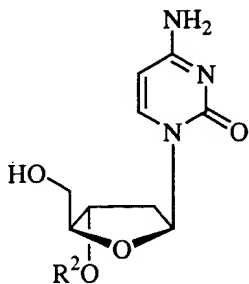


$R^3$  and  $R^4$  are independently H, straight chained, branched or cyclic alkyl, dialkylaminoalkylene, CO-alkyl, CO-aryl, CO-alkoxyalkyl, CO-aryloxyalkyl, CO-substituted aryl, alkylsulfonyl, arylsulfonyl, aralkylsulfonyl, amino acid residue, mono, di, or triphosphate, or a phosphate prodrug.

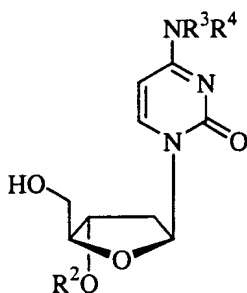
176. (New) The compound of claim 175, wherein  $R^2$  is CO-alkyl.
177. (New) The compound of claim 176, wherein the CO-alkyl is CO-methyl.
178. (New) The compound of claim 176, wherein the CO-alkyl is CO-propyl.
179. (New) The compound of claim 175, wherein  $R^2$  is an amino acid residue of the formula  $C(O)C(R^8)(R^9)(NR^{10}R^{11})$ , wherein  $R^8$  is the side chain of an amino acid and wherein  $R^8$  can optionally be attached to  $R^{10}$  to form a ring structure; or alternatively,  $R^8$  is an alkyl, aryl, heteroaryl or heterocyclic moiety;  $R^9$  is hydrogen, alkyl or aryl; and  $R^{10}$  and  $R^{11}$  are independently hydrogen, acyl or alkyl.
180. (New) The compound of claim 179, wherein  $R^2$  is L-valinyl.
181. (New) The compound of claim 175, wherein  $R^3$  and  $R^4$  are hydrogen.
182. (New) The compound of claim 175, wherein  $R^3$  is hydrogen and  $R^4$  is dimethylamino-methylene.
183. (New) The compound of claim 175, wherein  $R^3$  is hydrogen and  $R^4$  is CO-alkyl.
184. (New) The compound of claim 175, wherein  $R^3$  is hydrogen and  $R^4$  is CO-methyl.
185. (New) The compound of claim 175, wherein  $R^3$  is hydrogen and  $R^4$  is L-valinyl.
186. (New) A compound of the formula:



or its pharmaceutically acceptable salt thereof, wherein

$R^2$  is selected from the group consisting of straight chained, branched or cyclic alkyl, CO-alkyl, CO-aryl, CO-alkoxyalkyl, CO-aryloxyalkyl, CO-substituted aryl, alkylsulfonyl, arylsulfonyl, aralkylsulfonyl, amino acid residue, mono, di, or triphosphate, or a phosphate prodrug.

187. (New) The compound of claim 186, wherein  $R^2$  is CO-alkyl.
188. (New) The compound of claim 187, wherein the CO-alkyl is CO-methyl.
189. (New) The compound of claim 187, wherein the CO-alkyl is CO-propyl.
190. (New) The compound of claim 186, wherein  $R^2$  is an amino acid residue of the formula  $C(O)C(R^8)(R^9)(NR^{10}R^{11})$ , wherein  $R^8$  is the side chain of an amino acid and wherein  $R^8$  can optionally be attached to  $R^{10}$  to form a ring structure; or alternatively,  $R^8$  is an alkyl, aryl, heteroaryl or heterocyclic moiety;  $R^9$  is hydrogen, alkyl or aryl; and  $R^{10}$  and  $R^{11}$  are independently hydrogen, acyl or alkyl.
191. (New) The compound of claim 190, wherein  $R^2$  is L-valinyl.
192. (New) A pharmaceutical composition comprising an effective anti-HBV amount of a compound of the formula:



or its pharmaceutically acceptable salt thereof, wherein

$R^2$  is selected from the group consisting of straight chained, branched or cyclic alkyl, CO-alkyl, CO-aryl, CO-alkoxyalkyl, CO-aryloxyalkyl, CO-substituted aryl, alkylsulfonyl, arylsulfonyl, aralkylsulfonyl, amino acid residue, mono, di, or triphosphate, or a phosphate prodrug; and

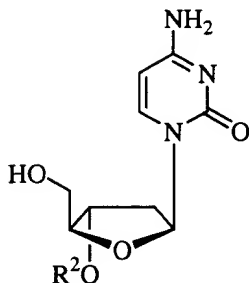
$R^3$  and  $R^4$  are independently H, straight chained, branched or cyclic alkyl, dialkylaminoalkylene (in particular, dimethylaminomethylene), CO-alkyl, CO-aryl, CO-

alkoxyalkyl, CO-aryloxyalkyl, CO-substituted aryl, alkylsulfonyl, arylsulfonyl, aralkylsulfonyl, amino acid residue, mono, di, or triphosphate, or a phosphate prodrug; with a pharmaceutically acceptable carrier or diluent.

193. (New) The pharmaceutical composition of claim 192, wherein  $R^2$  is CO-alkyl.
194. (New) The pharmaceutical composition of claim 193, wherein the CO-alkyl is CO-methyl.
195. (New) The pharmaceutical composition of claim 193, wherein the CO-alkyl is CO-propyl.
196. (New) The pharmaceutical composition of claim 192, wherein  $R^2$  is an amino acid residue of the formula  $C(O)C(R^8)(R^9)(NR^{10}R^{11})$ , wherein  $R^8$  is the side chain of an amino acid and wherein  $R^8$  can optionally be attached to  $R^{10}$  to form a ring structure; or alternatively,  $R^8$  is an alkyl, aryl, heteroaryl or heterocyclic moiety;  
 $R^9$  is hydrogen, alkyl or aryl; and  
 $R^{10}$  and  $R^{11}$  are independently hydrogen, acyl or alkyl.
197. (New) The pharmaceutical composition of claim 196, wherein  $R^2$  is L-valinyl.
198. (New) The pharmaceutical composition of claim 192, wherein  $R^3$  and  $R^4$  are hydrogen.
199. (New) The pharmaceutical composition of claim 192, wherein  $R^3$  is hydrogen and  $R^4$  is dimethylamino-methylene.
200. (New) The pharmaceutical composition of claim 192, wherein  $R^3$  is hydrogen and  $R^4$  is CO-alkyl.
201. (New) The pharmaceutical composition of claim 192, wherein  $R^3$  is hydrogen and  $R^4$  is CO-methyl.
202. (New) The pharmaceutical composition of claim 192, wherein  $R^3$  is hydrogen and  $R^4$  is L-valinyl.

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203. (New) A pharmaceutical composition comprising an effective anti-HBV amount of a compound of the formula:

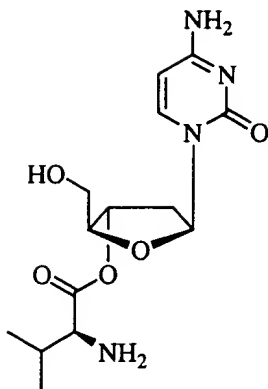


or its pharmaceutically acceptable salt thereof, wherein

R<sup>2</sup> is selected from the group consisting of straight chained, branched or cyclic alkyl, CO-alkyl, CO-aryl, CO-alkoxyalkyl, CO-aryloxyalkyl, CO-substituted aryl, alkylsulfonyl, arylsulfonyl, aralkylsulfonyl, amino acid residue, mono, di, or triphosphate, or a phosphate prodrug;

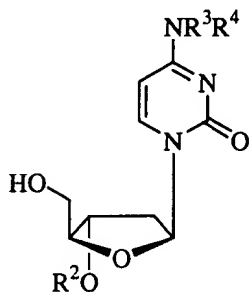
with a pharmaceutically acceptable carrier or diluent.

204. (New) The pharmaceutical composition of claim 203, wherein R<sup>2</sup> is CO-alkyl.
205. (New) The pharmaceutical composition of claim 204, wherein the CO-alkyl is CO-methyl.
206. (New) The pharmaceutical composition of claim 204, wherein the CO-alkyl is CO-propyl.
207. (New) The pharmaceutical composition of claim 203, wherein R<sup>2</sup> is an amino acid residue of the formula C(O)C(R<sup>8</sup>)(R<sup>9</sup>)(NR<sup>10</sup>R<sup>11</sup>), wherein  
R<sup>8</sup> is the side chain of an amino acid and wherein, as in proline, R<sup>8</sup> can optionally be attached to R<sup>10</sup> to form a ring structure; or alternatively, R<sup>8</sup> is an alkyl, aryl, heteroaryl or heterocyclic moiety;  
R<sup>9</sup> is hydrogen, alkyl or aryl; and  
R<sup>10</sup> and R<sup>11</sup> are independently hydrogen, acyl or alkyl.
208. (New) The pharmaceutical composition of claim 207, wherein R<sup>2</sup> is L-valinyl.
209. (New) A pharmaceutical composition comprising a compound of the formula



or its pharmaceutically acceptable salt thereof, with a pharmaceutically acceptable carrier or diluent.

210. (New) A pharmaceutical composition comprising an effective anti-HBV amount of a compound of the formula:



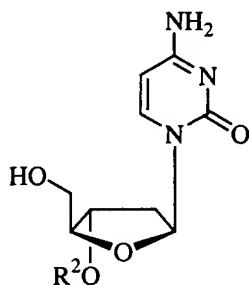
or its pharmaceutically acceptable salt thereof, wherein

R<sup>2</sup> is selected from the group consisting of straight chained, branched or cyclic alkyl, CO-alkyl, CO-aryl, CO-alkoxyalkyl, CO-aryloxyalkyl, CO-substituted aryl, alkylsulfonyl, arylsulfonyl, aralkylsulfonyl, amino acid residue, mono, di, or triphosphate, or a phosphate prodrug; and

R<sup>3</sup> and R<sup>4</sup> are independently H, straight chained, branched or cyclic alkyl, dialkylaminoalkylene (in particular, dimethylaminomethylene), CO-alkyl, CO-aryl, CO-alkoxyalkyl, CO-aryloxyalkyl, CO-substituted aryl, alkylsulfonyl, arylsulfonyl, aralkylsulfonyl, amino acid residue, mono, di, or triphosphate, or a phosphate prodrug; in combination with one or more anti-hepatitis B virus agents; optionally with a pharmaceutically acceptable carrier or diluent.

211. (New) The pharmaceutical composition of claim 210, wherein R<sup>2</sup> is CO-alkyl.

212. (New) The pharmaceutical composition of claim 211, wherein the CO-alkyl is CO-methyl.
213. (New) The pharmaceutical composition of claim 211, wherein the CO-alkyl is CO-propyl.
214. (New) The pharmaceutical composition of claim 210, wherein  $R^2$  is an amino acid residue of the formula  $C(O)C(R^8)(R^9)(NR^{10}R^{11})$ , wherein  $R^8$  is the side chain of an amino acid and wherein  $R^8$  can optionally be attached to  $R^{10}$  to form a ring structure; or alternatively,  $R^8$  is an alkyl, aryl, heteroaryl or heterocyclic moiety;  
 $R^9$  is hydrogen, alkyl or aryl; and  
 $R^{10}$  and  $R^{11}$  are independently hydrogen, acyl or alkyl.
215. (New) The pharmaceutical composition of claim 214, wherein  $R^2$  is L-valinyl.
216. (New) The pharmaceutical composition of claim 210, wherein  $R^3$  and  $R^4$  are hydrogen.
217. (New) The pharmaceutical composition of claim 210, wherein  $R^3$  is hydrogen and  $R^4$  is dimethylamino-methylene.
218. (New) The pharmaceutical composition of claim 210, wherein  $R^3$  is hydrogen and  $R^4$  is CO-alkyl.
219. (New) The pharmaceutical composition of claim 210, wherein  $R^3$  is hydrogen and  $R^4$  is CO-methyl.
220. (New) The pharmaceutical composition of claim 210, wherein  $R^3$  is hydrogen and  $R^4$  is L-valinyl.
221. (New) A pharmaceutical composition comprising an effective anti-HBV amount of a compound of the formula:



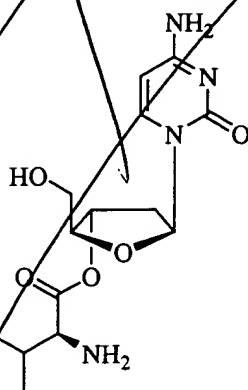
or its pharmaceutically acceptable salt thereof, wherein

$R^2$  is selected from the group consisting of straight chained, branched or cyclic alkyl, CO-alkyl, CO-aryl, CO-alkoxyalkyl, CO-aryloxyalkyl, CO-substituted aryl, alkylsulfonyl, arylsulfonyl, aralkylsulfonyl, amino acid residue, mono, di, or triphosphate, or a phosphate prodrug;

in combination with one or more anti-hepatitis B virus agents;

optionally with a pharmaceutically acceptable carrier or diluent.

222. (New) The pharmaceutical composition of claim 221, wherein  $R^2$  is CO-alkyl.
223. (New) The pharmaceutical composition of claim 222, wherein the CO-alkyl is CO-methyl.
224. (New) The pharmaceutical composition of claim 222, wherein the CO-alkyl is CO-propyl.
225. (New) The pharmaceutical composition of claim 221, wherein  $R^2$  is an amino acid residue of the formula  $C(O)C(R^8)(R^9)(NR^{10}R^{11})$ , wherein  $R^8$  is the side chain of an amino acid and wherein  $R^8$  can optionally be attached to  $R^{10}$  to form a ring structure; or alternatively,  $R^8$  is an alkyl, aryl, heteroaryl or heterocyclic moiety;  $R^9$  is hydrogen, alkyl or aryl; and  $R^{10}$  and  $R^{11}$  are independently hydrogen, acyl or alkyl.
226. (New) The pharmaceutical composition of claim 225, wherein  $R^2$  is L-valinyl.
227. (New) A pharmaceutical composition comprising a compound of the formula



or its pharmaceutically acceptable salt thereof, in combination with one or more anti-hepatitis B virus agents; optionally with a pharmaceutically acceptable carrier or diluent.

228. (New) The pharmaceutical composition of any one of claims 210-227, wherein the anti-hepatitis B virus agent is a  $\beta$ -L-deoxyribonucleoside.
229. (New) The pharmaceutical composition of claim 228, wherein the  $\beta$ -L-deoxyribonucleoside is selected from the group consisting of  $\beta$ -L-deoxyribothymidine ( $\beta$ -L-dT),  $\beta$ -L-deoxyribocytosine ( $\beta$ -L-dC),  $\beta$ -L-deoxyribouridine ( $\beta$ -L-dU),  $\beta$ -L-deoxyriboadenine ( $\beta$ -L-dA),  $\beta$ -L-deoxyriboguanine ( $\beta$ -L-dG) or  $\beta$ -L-deoxyribo-inosine ( $\beta$ -L-dI).
230. (New) The pharmaceutical composition of claim 228, wherein the  $\beta$ -L-deoxyribonucleoside is  $\beta$ -L-deoxyribothymidine ( $\beta$ -L-dT).
231. (New) The pharmaceutical composition of any one of claims 210-227, wherein the anti-hepatitis B virus agent is selected from the group consisting of entecivir, cis-2-hydroxymethyl-5-(5-fluorocytosin-1-yl)-1,3-oxathiolane; (-)-cis-2-hydroxymethyl-5-(5-fluorocytosin-1-yl)-1,3-oxathiolane; (-)-cis-2-hydroxymethyl-5-(cytosin-1-yl)-1,3-oxathiolane (3TC);  $\beta$ -D-dioxolanyl-guanine (DXG),  $\beta$ -D-dioxolanyl-2,6-diaminopurine (DAPD),  $\beta$ -D-dioxolanyl-6-chloropurine (ACP), L-FDDC (5-fluoro-3'-thia-2',3'-dideoxycytidine), carbovir, interferon, penciclovir, famciclovir, L-FMAU, BMS-200475, bis pom PME A (adefovir, dipivoxil), lobucavir, ganciclovir, or ribavirin.
232. (New) The pharmaceutical composition of any one of claims 192-231, wherein the pharmaceutically acceptable carrier is suitable for oral delivery.
233. (New) The pharmaceutical composition of any one of claims 192-231, wherein the pharmaceutically acceptable carrier is suitable for intravenous delivery.
234. (New) The pharmaceutical composition of any one of claims 192-231, wherein the pharmaceutically acceptable carrier is suitable for parenteral delivery.
235. (New) The pharmaceutical composition of any one of claims 192-231, wherein the pharmaceutically acceptable carrier is suitable for intradermal delivery.
236. (New) The pharmaceutical composition of any one of claims 192-231, wherein the pharmaceutically acceptable carrier is suitable for subcutaneous delivery.
237. (New) The pharmaceutical composition of any one of claims 192-231, wherein the pharmaceutically acceptable carrier is suitable for topical delivery.